Remarks/Arguments:

Claims 1-10 are pending. Claims 1-10 stand rejected.

Section 103 Rejections:

Claims 1, 6, 9 and 10 have been rejected as being obvious in view of Reitmeier, Limberg and Kim. Applicants respectfully submit that these rejections are overcome for the reasons set forth below. Amended claim 1 now includes features which are not suggested by the cited references, namely:

- an amplitude detector coupled **directly** to the tuner to provide a measure of the amplitude of the tuned television signal **prior to the demodulation of the tuned television signal**;

Basis for amended claim 1 may be seen, for example, in FIG. 1. As shown, demodulator 112 is coupled to tuner 110 to demodulate a tuned television signal. Amplitude detector 111 is coupled **directly** to tuner 110 to provide a measure of the amplitude of the tuned television signal **prior to the demodulation of the tuned television signal.**

It is because applicants have included the features of amended claim 1 that applicants are able to rapidly generate a channel map for a digital television transmission system, by determining only that a signal of sufficient strength exists at a respective channel position, rather than by tuning and recovering channel information at that channel frequency (see, for example, the specification at page 11, lines 3-6). As also stated, for example, in the specification, at page 7, lines 25-28, the invention advantageously "does not actually demodulate the DTV signals, when it builds the channel map. The process of building a channel map takes only a relatively short amount of time".

Reitmeier discloses, in FIG. 1, two tuners used simultaneously to identify a selected channel frequency for the viewer and to maintain an updated channel map. As also shown in FIG. 1, Reitmeier discloses demodulators for demodulating a first tuned signal and a second tuned television signal. Accordingly, Reitmeier **fully demodulates the tuned signals to determine if the signal is a television signal** (e.g. vertical sync is present) before adding the signal to the scan list. This is in accord with applicants' statement in the previous Office

Action Response, that applicants are aware only of systems and television receivers that derive a channel map by first determining that a valid television signal is being received. This involves considerably more than just obtaining an amplitude, and comparing the amplitude to some threshold value. It requires, similarly to the disclosure of Reitmeier, fully demodulating the signal to determine if it a television signal before adding it to the scan list.

Reitmeier does **not** disclose or suggest an amplitude detector coupled **directly** to the tuner to provide a measure of the amplitude of the tuned television signal **prior to the demodulation of the tuned television signal**. Furthermore, Reitmeier does **not** disclose a method for deriving a channel map, as claimed in amended claim 1. Rather, Reitmeier teaches a method by which to update a scan list, in response to a user input (line 25 of column 9 through line 27 of column 10). It is further noted that the method of Reitmeier demodulates and de-multiplexes a channel signal and compares parameters, derived from the resulting data stream, with parameters stored in a scan list, corresponding to the particular channel being updated (line 55 of column 9 through line 17 of column 10). Accordingly, amended claim 1 is patentably different from Reitmeier.

Limberg discloses an automatic fine tuning system, which uses an amplitude detector in conjunction with a threshold detector, in order to determine if an automatic fine tuning (AFT) signal corresponds specifically to that of a digital television signal, otherwise it is assumed to be an analog signal. Limberg discloses, in Fig. 1, several components, such as mixer 6, mixer 11, SAW filter 13 and reverse-AGC IF amplifier 14, in front of threshold detector 25 for demodulating an input RF signal. Limberg, however, does **not** disclose or suggest **deriving a channel map** by **directly coupling an amplitude detector to a tuner to provide a measure of the amplitude of the tuned television signal, prior to the demodulation of the tuned television signal**.

Kim discloses a device for updating EPG information in a digital TV receiver using a first tuner and a second tuner, while viewing a channel selected by a first tuner. As shown in FIG. 1, Kim discloses obtaining a fully demodulated signal, as shown by first transport stream decoder 106. Accordingly, Kim discloses using a tuner, an IF module, and a first channel decoder in front of first transport stream decoder 106 to obtain signal data. Kim updates the EPG information using fully demodulated and decoded signal data. Kim, however, does **not** disclose

an amplitude detector coupled **directly** to the tuner to provide a measure of the amplitude of the tuned television signal **prior to the demodulation of the tuned television signal.**

Applicants further note that Reitmeier concerns masking latency in switching among channels in a digital television receiver, while Limberg concerns automatic fine tuning. Lastly, Kim concerns comparing stored EPG information with newly determined EPG information, and updating the EPG based on the comparison. Accordingly, the three cited references are not related to each other and, therefore, applicants submit that the three references are not combinable. One of ordinary skill in the are using the teachings of these references would not be motivated to produce the subject invention. The only such motivation comes from Applicants' disclosure, which is being used improperly against them.

Assuming, arguendo, that the three references could be combined, nevertheless, the invention, as recited in claim 1, would not be achieved by these three references. The combination of the three references does **not** provide an apparatus for deriving a channel map based on an amplitude detector coupled **directly** to the tuner to provide a measure of the amplitude of the tuned television signal, **prior to the demodulation of the tuned television signal.** The combined references further do not provide an output signal having a first value, if the measure of the amplitude is greater than the threshold value, so that the processor is responsive to the output signal of the comparator to change the channel map to indicate that a specified channel has been received by the DTV receiver.

Reconsideration of amended claim 1 is respectfully requested.

Although not the same claim 6 has been amended to include features similar to amended claim 1. Therefore, amended claim 6 is not subject to rejection in view of the cited references for the same reasons set forth for amended claim 1. Claims 2 and 3 depend from amended claim 1, and claims 7-10 depend from amended claim 6. These claims, therefore, are also not subject to rejection in view of the cited references for at least the same reasons set forth for amended claim 1.

Claims 2-5 and 7-8 have been rejected as being obvious in view of Reitmeier, Limberg, Kim and further in view of Patel. This ground for rejection is respectfully traversed.

Claim 4 includes features which are not suggested by the cited references, namely:

- a first tuner. . . to provide a **first tuned television signal having an amplitude;**
- an amplitude detector **coupled to the first tuner to provide a measure of the amplitude of the tuned television signal;**
- a comparator configured to compare the measure of the amplitude provided by the amplitude detector to a threshold value . . .and provide an output signal. . .
- the processor is responsive to the output signal of the comparator . . . and is responsive to the demodulator **to increase the threshold value** if the demodulator does not provide a baseband signal for the channel frequency requested by a user.

Claim 4 explicitly recites that the first tuner provides a **first tuned television signal having an amplitude** and an amplitude detector coupled to a first tuner to **provide a measure of the amplitude** of the tuned television signal. Furthermore, it is also implicit in claim 4 that the amplitude detector is coupled to the first tuner, **prior to any demodulator demodulating the tuned television signal** because the amplitude detector processes the **"tuned television signal"** provided by the tuner. Accordingly, claim 4 includes features similar to amended claim 1, in that the amplitude detector is coupled directly to the tuner and provides a measure of the amplitude of the tuned television signal, prior to the demodulation of the tuned television signal.

As stated previously, **none** of the cited references discloses the features of an amplitude detector coupled to a first tuner to provide a measure of the amplitude of the tuned television signal. The Office Action, with respect to claim 4, admits that Reitmeier does **not** disclose the claimed "amplitude detector coupled to the first tuner to provide a measure of the amplitude of the tuned television signal" (see page 9 of Office Action). The Office Action, however, states that Limberg teaches an amplitude detector coupled to a threshold detector which performs the functions of the claimed comparator. Applicants respectfully submit, as stated above, that Limberg does **not** suggest an amplitude detector coupled to a tuner for providing a measure of the amplitude of the tuned television signal.

The Office Action, at page 10, also admits that Reitmeier does **not** explicitly teach a feature of claim 4, namely changing a value in the channel map based on the lack of a signal

received by the receiver and increasing the threshold value, if the selected baseband signal is not provided. The Office Action, however, states that Kim compares stored EPG information to newly determined EPG information and updates the EPG accordingly. As stated previously, Kim does **not** disclose an amplitude detector coupled to a tuner to provide a measure of the amplitude of the tuned television signal. In addition, Kim does **not** disclose **increasing the threshold value, if the selected baseband signal is not provided**.

The Office Action also asserts (at the bottom of page 6 to the top of page 7) that Kim teaches that each channel is checked and microprocessor 116 (comparator) compares the stored EPG information to newly determined EPG information and updates the EPG accordingly. Kim, however, does **not** disclose a processor responsive to an output signal of the comparator to change the channel map data structure to indicate that the specified channel has been received by the DTV receiver.

Patel discloses a threshold detector to determine which ghost in the received signal to correct and which ghost to ignore. Patel does **not** use a threshold detector to determine whether a signal is present or not present. Patel does **not** increase the threshold value, if the selected signal is not provided.

Favorable reconsideration of claim 4 is respectfully requested.

With respect to claims 3, 5 and 8, the Office Action admits, at the bottom of page 8, that Patel does **not** explicitly teach obtaining a measure of estimated noise and adjusting the threshold value based on the measure of estimated noise. The Office Action, however, states that Patel teaches ghost cancellation and convergence avoiding coefficients to achieve desired values rapidly. The Office Action equates ghost imaging or co-channel interference with the claimed "noise" in claims 3, 5 and 8. This does not make sense in view of the subject invention. Both multipath or "ghost" interference and co-channel interference are caused by television signals. If multipath interference exists, then there is a valid television signal being broadcast and the channel would be added to the channel map. It would not be effective nor would it be rational to raise the threshold value above the level of the multipath interference because the multipath interference can not exist without the main signal. Co-channel interference, on the other hand, is interference caused by an analog television signal that is being broadcast in the same frequency band as the digital television signal. Patel does not

teach raising the threshold value if co-channel interference is detected but, instead, estimating the co-channel interference and subtracting it from the DTV signal. (See column 8, lines 32-48). This is contrary to the statement in the Office Action that "Patel teaches adaptive threshold values to respond to detected noise estimations." Patel does **not** teach that the threshold value applied by the threshold detector may be adjusted, as required by claims 3, 5 and 8. Accordingly, one of ordinary skill in the art knowing the teachings of Reitmeier, Kim and Patel would not produce the subject invention as defined by claims 3, 5 and 8.

Reconsideration of claims 3, 5 and 8 is respectfully requested.

In view of the foregoing amendments and remarks, Applicants request that the Examiner reconsider and withdraw the rejection of claims 1-10.

Respectfully submitted,

Kenneth N. Nigon, Reg. No. 31,549
Jack J. Jankovitz, Reg. No. 42,690
Attorneys for Applicants

JJJ/mc/tmb

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P.O. Box 980
Valley Forge, PA 19482
(610) 407-0700

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September 25, 2003

Tonya M. Berger